

**APPENDIX F**

**USFWS PLANNING AID LETTER**



## United States Department of the Interior

National Park Service  
Everglades National Park  
4001 State Road 9336  
Homestead, FL 33034

Fish and Wildlife Service  
Office of the State Supervisor  
P.O. Box 2676  
Vero Beach, FL 32961

May 24, 2000

Colonel Joe Miller  
District Commander, Jacksonville District  
U.S. Army Corps of Engineers  
P.O. Box 4970  
Jacksonville, FL 32232-0019

Dear Colonel Miller:

The Department of the Interior (Department) has prepared this Planning Aid Letter (PAL) for the Interim Operations of the Central and Southern Florida (C&SF) Project to Protect the Cape Sable Seaside Sparrow Until the Modified Water Deliveries to Everglades National Park (ENP) project is fully constructed, otherwise known as the Interim Operating Plan (IOP). The South Florida Water Management District (SFWMD) is the local sponsor for this project. Information presented below was developed in a series of meetings and other communications between the Fish and Wildlife Service (Service) and the National Park Service (NPS). In addition, the Florida Fish and Wildlife Conservation Commission has provided comments on a draft version of this letter. This PAL is provided in accordance with the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*) and section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This PAL does not constitute the report of the Secretary of the Interior as required by section 2(b) of the FWCA, nor does it constitute a biological opinion under section 7 of the ESA. Due to the expected changes in alternative design as the participating agencies evaluate elements of the IOP, the positions of the Department in this and any subsequent PALs are subject to change.

This PAL focuses on recommendations based on our analysis of structural and operational components modeled in IOP 1(=Interim Structural and Operational Plan [ISOP] 4), IOP 9(=ISOP 9), IOP 2, IOP 2a, and in several modeled versions of the exact provisions of the Reasonable and Prudent Alternative (RPA) presented in the Service's February 19, 1999, Biological Opinion (BO). These recommendations are intended to assist the Army Corps of Engineers (Corps) in your development of additional modeling runs. A more detailed discussion of our analysis of modeled alternatives and the ecological basis for our recommendations will be provided in a Fish and Wildlife Coordination Act Report, to be prepared upon receipt of all additional modeling information.

Colonel Joe Miller  
Page 2  
May 24, 2000

### Summary and Major Recommendations

Due to the complexity of the issues involved in our analysis of ISOP and IOP alternatives, we have summarized our major points below. Detailed observations and additional, technical recommendations are provided in an enclosure.

1. The Corps has not yet produced a simulation of RPA requirements that can be used as a baseline against which to measure ISOP and IOP performance. A valid RPA baseline must include closing the S12, S343 and S344 structures starting on November 1<sup>st</sup> of each year and must include the maximum possible capacity for the S333 structure.
2. The Corps has not yet produced an ISOP or IOP alternative that appears to meet RPA requirements. A successful ISOP or IOP alternative must also include closing the S12, S343 and S344 structures starting on November 1<sup>st</sup> of each year, and must provide the equivalent of RPA water levels and hydroperiods in the eastern sparrow habitats without substantially reducing nesting habitat availability.
3. Some of the modeling runs produced so far show promise for development of ISOP and IOP operations that appear to meet portions of the RPA targets and that minimize impacts to other parts of the natural system and to other project purposes. Additional modeling that combines these promising strategies into a unified whole will be necessary before the Department can assess the likelihood of overall RPA compliance.
4. The reasons for substantial discrepancies in modeled capacity for the S333 structure in IOP/ISOP versus Modified Water Deliveries modeling must be clearly explained in the public record.
5. The modeled performance of the S332B pump must be reviewed in light of data from recent testing of the structure. The field data indicates that the performance predicted for S332B is overly optimistic. That is, the proposed alternatives rely on S332B performance not supported by field observations.
6. The "no action alternative" for IOP National Environmental Policy Act (NEPA) analysis should be the ISOP, and the baseline for NEPA comparison of C&SF Project purposes should be the 1983 Base.
7. The Corps' NEPA analysis should clearly explain how each IOP or ISOP element affects RPA compliance. For those elements that do not affect RPA compliance, NEPA documentation should explain the Corps' reasons for inclusion.

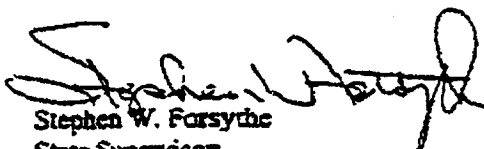
Colonel Joe Miller  
Page 3  
May 24, 2000

We continue to be pleased with your progress towards designing an operational plan that will meet Endangered Species Act requirements, and we appreciate the hard work and long hours invested by many members of your staff. For further information or assistance, please contact Dr. Thomas Van Lent at (305)242-7304 or Heather McSharry at (561)778-0896, extension 12.

Sincerely yours,



Richard G. Ring  
Superintendent  
Everglades National Park



Stephen W. Forsythe  
State Supervisor  
Ecological Services  
Fish and Wildlife Service

Enclosure

cc:  
Florida Fish and Wildlife Conservation Commission, Vero Beach, FL  
Florida Dept. of Environmental Protection, Tallahassee, FL  
Florida Dept. of Agriculture and Consumer Services, West Palm Beach, FL  
Executive Director, South Florida Water Management District, West Palm Beach, FL  
Miccosukee Tribe, Miami, FL  
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GARD, Area III, Service, Atlanta, GA  
Field Supervisor, Service, Vero Beach, FL

## ENCLOSURE - TECHNICAL COMMENTS AND RECOMMENDATIONS

### Primary Findings and Recommendations

This section conveys the most important and immediate concerns relating to the direction of modeling in the next round.

1. In order to simulate the requirements of the Biological Opinion (BO), the simulations RPA 100-102 should incorporate earlier closings of the S-12 and related structures, and increased S333 capacity.

The RPA 110-140 modeling appears to show that closing the S12, S343 and S344 structures by November 1<sup>st</sup> of each year (RPA 130) results in an additional year in which the RPA's target for 60 consecutive days of water levels at or below 6.0 feet at the National Park 205 gage (NP205) would be met. This matches the performance shown in the RPA 110 run, in which the structures are closed all year, so maximum performance in terms of meeting the 60-day target at NP205 can be achieved with November 1<sup>st</sup> closure. Although this earlier closure may have adverse effects upstream in the Water Conservation Areas (WCAs), we believe that these impacts may be acceptable in the context of avoiding the extinction of the Cape Sable seaside sparrow and should be explored as part of an accurate RPA "baseline" and in at least one IOP alternative. We would

like to see the Corps produce an IOP run that includes November 1<sup>st</sup> closure of these structures along with the WCA2A and 3A regulation schedule changes as in the IOP 1 and IOP 9 runs.

The simulations provided by the Corps show that the imposed constraint of 1350 or 1450 cubic feet per second (cfs) at S333 affects flows into Northeast Shark Slough about half of the years. This constraint significantly affects the RPA simulations and the degree to which the RPA's 30%, 45%, and 60% targets for regulatory releases into Northeast Shark Slough are achieved.

The BO recognizes that some limit to flow through S333 exists. However, in the view of the Department, restrictions to flow at S333 are imposed by either: (a) the physical limits of the structure to pass flows (such as structure size and construction, available water, head differences across the structure, and getaway capacity); or, (b) constraints imposed by conditions or operations that would threaten or compromise the integrity of the structure. The Corps chose 1350 cfs as the upper limit not because of the above reasons, but because that was what the structure was designed to pass. This would, therefore, be a conservative estimate of the physical limits of the structure. Tests demonstrate flows could easily exceed 1450 cfs, and the highest observed flow was 1580 cfs. The Corps and SFWMD, during the Modified Water Deliveries conveyance simulations, estimated sustained flows of 2000 to 2500 cfs were possible. This was based upon the physics of flow and observed flow measurements, and SFWMD has provided information suggesting flows in this range will not compromise structural integrity. The Department accepts this as a reasonable analysis on the physical limits of the structure.

The remaining step is for the Corps to define the conditions and operations that could compromise the structural integrity of S333. The draft Environmental Impact Statement (EIS) should contain a review of the design of S333 and guidelines for operations that preclude a structural failure of S333.

To summarize this point, based on the above information, the Service believes that RPA 100-102 are not accurate RPA "baseline" runs. An accurate RPA model run must include: (1) November 1<sup>st</sup> closure of the S12s, S343s and S344; and, (2) increased capacity at S333 reflecting true physical capacity limitations. We wish to reiterate that this is only one possible way of meeting RPA requirements and that it may not be the most desirable method for ecological or other reasons.

We also wish to clarify our understanding of the nomenclature the Corps has used to refer to modeling runs that attempt to simulate the exact provisions of the RPA. It is important that all parties keep in mind the fact that labeling a run "RPA" or "BOBase" does not necessarily mean that the run truly reflects the exact provisions of the RPA. Although the Corps' hydrologic expertise will of course be important in characterizing how well a particular run reflects RPA requirements, the Corps must ultimately obtain the Service's concurrence on the sufficiency of an RPA run used as the basis for comparison against ISOP and IOP alternatives.

2. The simulation "IOP 9" does not appear to meet the requirements of the Biological Opinion.

IOP 9 contains changes in L31W operations that do not appear to reduce the adverse effects to sparrow habitats that were observed in the Taylor Slough area during recent Interim Structural and Operational Plan (ISOP) operations. Despite closure of S332 and S175 in this IOP 9 modeling, expected hydroperiods in subpopulation D continue to significantly reduce nesting habitat availability as compared to RPA1 and Test 7 Phase I. Thus, IOP 9 operations appear to increase adverse impacts to subpopulation D.

In subpopulation C, IOP 9 wet season water levels appear to meet RPA requirements. However,

therefore, to use the 1995 Base as the "No Action Alternative". In our view, the only reasonable choice for the "No Action Alternative" is the ISOP.

4. In the Corps' NEPA analysis, the baseline for comparison for C&SF Project purposes should be the 1983 Base, not Experimental Water Deliveries Test 7 Phase I.

The Corps is apparently planning to use the Experimental Water Deliveries Test 7 Phase I operations, simulated as the 1995 Base, as the baseline for comparing performance of the simulations to C&SF Project objectives. This is incorrect, and will lead to specious conclusions and incompatibilities with previous NEPA compliance efforts.

First, the Corps and the SFWMD have withdrawn concurrence in the Experimental Water Deliveries Program, ending this project. The "No Action Alternative" for the Experimental Water Deliveries Program is the 1983 Base and so defines the authorized C&SF Project benefits in the absence of the Experimental Water Deliveries Program. Since Experimental Water Deliveries Program operational authority has now ceased, the Corps must use the 1983 Base to assess C&SF Project benefits in order to ensure consistency with past NEPA compliance efforts.

Second, using Test 7 Phase I as a baseline leads directly to the erroneous conclusion that Test 7 Phase II operations reduce C&SF Project flood control benefits. This is contrary to the findings in the 1995 Environmental Assessment for Test 7 Phase II, and the subsequent annual report on this project.

Third, using Test 7 Phase I as the baseline arbitrarily results in a permanent change in the C&SF Project benefits without NEPA analysis documenting the expected impacts of the change. Using Test 7 Phase I as the baseline is effectively equivalent to increasing flood protection in the L31N/C111 basins south of G211, and a decrease in the wetland viability in the same area. Choice of Test 7 Phase I as a baseline makes permanent conditions that were expected to be temporary, to last no longer than the Experimental Water Deliveries Program.

5. The evaluation of whether IOP 2 and IOP 2a appear to simulate the RPA depends primarily on the possibly unrealistic predicted performance of S332B.

In our initial review of IOP 2 and IOP 2a, it appears that these simulations correct most of the adverse effects to sparrow habitats expected under IOP 9. Conditions in all subpopulations of the Cape Sable seaside sparrow appear to be hydrologically equivalent to RPA 100-102. The following caveats to this statement are in order. First, RPA 100-102 do not yet meet the conditions of the RPA. Second, hydrologic equivalency appears to rely heavily on the predicted performance of S332B that may be unrealistic in light of early results from actual operations of this structure.

According to the simulations presented by the Corps and further sensitivity analysis conducted by the Department, S332B is predicted to significantly increase hydroperiods and water levels

throughout the Rocky Glades. Our sensitivity analyses were given to the Corps on May 15, 2000. In IOP 2 and IOP 2a, water pumped into a 160-acre detention area is predicted to significantly increase average hydroperiods and water levels over a 60 square mile area when compared to operations without the pump. In short, IOP 2 and IOP 2a appear to simulate the RPA largely because of the predicted S332B performance.

Analysis of the available hydrologic information collected during the recent testing of S332B showed that, while there is definitely an increase in hydroperiods in the vicinity of the detention area, the effects are not observed at the scale predicted by the modeling simulations. Moreover, lower L31N stages implemented as part of the ISOP do appear to reduce hydroperiods in the marshes to the west even when S332B is operational, contrary to the modeling predictions. The differences are likely related to the differences in the modeled representation of S332B and the actual configuration of S332B. The actual footprint is 160 acres, whereas the modeling assumes a footprint 16 times larger. The actual S332B retention pond results in groundwater recharge only, whereas the model assumes surface water connections. Moreover, the model assumes the discharge area is more than 2 miles from L31N, whereas the actual distance is 1 mile from L31N. The Department recommends that the Corps include an assessment of the actual performance of S332B in the draft EIS, and that this information be used to guide IOP operations in addition to modeling information. As you know, the Service must judge compliance with the BO through assessment of actual operations and hydrological conditions in the sparrow habitats.

6. Each deviation from RPA operations should be isolated to determine its relative benefit to the Cape Sable seaside sparrow and attendant tradeoffs elsewhere.

Our analysis of ISOP and IOP alternatives in this and subsequent FWCA documents will focus in part on an examination of the direct influence each modeled action has on the alternative's ability to simulate RPA targets for the sparrow. When analysis shows that a particular action does not improve an alternative's ability to meet RPA targets, it is imperative that the Corps either eliminate that action from consideration for a preferred alternative or provide a clear explanation and NEPA analysis of the need for and purpose of that action. Examples of this that we have recognized so far include:

#### A. Changes to the WCA2A regulation schedule

Our analysis shows that changes to the 2A regulation schedule do not increase RPA performance in subpopulation A. It does, however, tend to decrease volumes introduced into L31N, reducing the adverse impacts to Taylor Slough and lower C-111 in IOP 9. In IOP 2, changing the WCA2A schedule does not, in and of itself, improve performance in meeting the RPA targets. However, this action may be justified for other reasons, such as a desire to minimize possible adverse impacts to WCA3A. This should be a consideration in the NEPA analysis.



## B. S332B performance

Examination of ISOP 9 and ISOP 2 with and without S332B show that the model predicts a significant effect (e.g., hydroperiods increasing by 30 days or more) in a semicircle to the west of the impounding cell, with diameter of 6 to 8 miles and the offset of some adverse impacts associated with lowering of L-31N canal stages. However, actual data from the recent tests of S332B show that, while there are clear benefits, effects on the scale predicted are not observed. If S332B does not deliver the magnitude of benefits predicted in the modeling, then the Corps should provide a clear explanation and analysis of actual benefits to sparrow habitats and adverse affects to other natural resources in the Rocky Glades that would be expected to result from S332B operations, along with a discussion of other purposes for S332B operation.

The performance of S332B is, of course, highly dependent upon the operational rules for

In Western Shark Slough, IOP 9 shows significantly reduced hydroperiods and ponding depths under wet conditions than either Test 7 Phase I or RPA 100-102. In Northeast Shark Slough, IOP 9 shows much lower hydroperiods than Test 7 Phase I and very much lower hydroperiods than RPA 100-102. This is because IOP 9 puts less water into Northeast Shark Slough than Test 7 Phase I, and much less than RPA 100-102.

In the northern Rocky Glades, hydroperiods in IOP 9 are reduced slightly in the vicinity of the 8.5 Square Mile Area (8.5 SMA), but increased in the vicinity of S332B relative to RPA 100-

C103 and S332D west of L31N. That is, S332B is expected to improve hydroperiods in the vicinity, but at the expense of hydroperiods further from the pump.

Taylor Slough hydroperiods are expected to increase significantly above RPA 100-102, as average annual flows at S332D increase by 20%. This is likely tied to both the additional ~~in flows introduced into L31N from WCA3A and by the decreased canal stages providing higher~~

## 2. Ecological Impacts

Because IOP 1 and IOP 9 utilize the same operational basis as current ISOP operations (routing flow around Northeast Shark Slough and into Taylor Slough), we would expect that

bird populations, followed by a relatively rapid yet steady water level recession rate. This steady, rapid recession of water levels, from very high levels to levels about normal for this time of year, appears to be providing a constant supply of foraging habitat for nesting wading birds in the WCAs.

The results of the 1999-2000 wading bird colony surveys in Everglades National Park (ENP) and the results of the 2000 Systematic Reconnaissance Flight (SRF) surveys for ENP are not yet available. However, recession rates and water levels in Shark Slough (as

of the B22 area) are currently similar to those seen during the 1995-1996

wading bird season. A very wet start to the season in December 1995 was followed by progressive but very slow drying, with water remaining over much of the park even at the

The majority of nesting kites in WCA3A are concentrated along the cypress edge of the western side. The kites in WCA3B are mostly along the southern edge north of Tamiami Trail. Drietz noted that during the survey of Shark Slough an estimated 50 - 80 birds were seen. As requested by ENP law enforcement, Drietz tried to stay close to the main airboat trail to minimize off-trail impacts. Therefore, access to a significant number of kites seen off the main airboat trail in Shark Slough was limited and nesting effort in ENP remains underestimated. Drietz had no explanation for this year's distribution of kites in South Florida, other than to say that apple snails are obviously doing well in these areas. Drietz indicated such an investigation would likely be a topic of a future report.

#### E. Alligators

Observations of short term effects from the ISOP operations on alligators are not currently available. However, based on past and current alligator research and monitoring projects in the Everglades, USGS alligator biologist Dr. Ken Rice offers some observations relevant to the water management operations of the past year.

Alligators rely on the steady dry season recession of water levels and the resultant concentration of food items to maintain a healthy body condition. This dry season concentration of prey in holes carries the alligator through the thermoregulatory stress of the dry season, prepares them for the upcoming breeding season, and gets them through the next wet season when food is dispersed and more difficult (costly) to find. The effects of an "extended" wet season were documented in ENP during the high water years of 1994-95 when prey remained dispersed and alligator body condition declined.

If, as a result of an exceptionally rapid recession of water levels, fish and other aquatic organisms do not move to refugia, instead remaining dispersed and stranded, alligator body condition suffers. Alligators in such a situation are stressed in multiple ways by having to expend energy to maintain a hole, maintain body condition, and actively thermoregulate, with little or no food. Rice proposes to examine the body condition of alligators in Taylor Slough this June.

Although alligators are well adapted to periodic drydowns the frequency and duration of drydowns must be considered. According to Rice, every time the water goes well below the surface, 3 to 5 years of reproduction is lost. That is, the smaller age classes are lost.

as every significant hole has a large alligator which either eats or displaces the smaller age classes. When water goes below ground, all juvenile habitats are gone, exposing the animals to heat stress and predation. With a severe drydown and resultant cannibalism, up to 10 years of reproduction can be lost. Recent work by Rice has found that in general, alligators do not move, no matter how dry it gets.

Alligator populations are probably more affected by cumulative impacts over several years. It would probably be difficult to see the effects of only one year of a particular

water management practice. Rice notes however, that water management practices that repeatedly stress alligators beyond their natural tolerances will probably result in a

#### F. Vegetation Communities

Observations on the impacts of the ISOP on vegetation, both terrestrial and submerged aquatic vegetation (SAV), in the creek systems associated with the foraging areas of spoonbills (e.g., southern Taylor Slough and the lower C-111 basin) are being collected. However, in a recent report (1999) Lorenz *et al.* notes that preliminary results of this study from 1996 - 1999 coincide with the earlier findings of others that indicate that large, rapid fluctuations in salinity have an adverse effect on submerged aquatic vegetation within the mangrove ecotone on northeastern Florida Bay. These rapid changes do not allow successional changes in community composition to occur, leading to complete vegetation die-offs.

Earlier research by others also indicated that barren bay-bottom areas are susceptible to wind events that can lead to turbid water conditions which can further hinder the reestablishment of SAV communities. Loss of SAV was also found to have a negative impact on the amount of epifauna and benthic invertebrates at these sites, which leads to a decrease in both the quantity and quality of food for fish foraging in this habitat. Studies have shown that vegetated areas provide shelter for small fishes and have a higher abundance of invertebrate fauna than unvegetated areas. Therefore, Lorenz *et al.* (1999) concludes, the fishes in unvegetated areas do not have optimal foraging conditions due to lack of available prey, which could lead to lower productivity, thereby explaining the reported inverse relationship between salinity and fish biomass.

In summary, observations of current operations lead to predictions on ecological consequences of IOP operations. Expert opinion and available information suggest that wading bird populations in WCA3A will improve, while those in ENP will remain stable or decrease and those in WCA2A and 2B will likely decrease. Adverse ecological impacts are expected primarily in WCA2A and 2B, the Rocky Glades, Taylor Slough and lower C-111. These include loss of aquatic communities, decreased wading bird foraging habit, and adverse effects on vegetation and alligator populations if continued long-term. The Service is awaiting information currently being collected by field researchers on the direct impacts to the Cape Sable seaside sparrow.

#### 1. Concerns over impacts to other listed species

The RPA requires that when the Corps has a choice between two options for RPA implementation, one which adversely impacts listed species and/or critical habitat, and one which does not, the Corps should choose the option that does not impact listed species or critical habitat. As discussed above, some preliminary information on responses of endangered snail kites, endangered wood storks and snail kite critical habitat areas to actual ISOP operations has become available. We believe that additional information on these issues will continue to become available over the timeframe for IOP development and that determinations on the ISOP and IOP's observed and predicted effects on these species and habitats would best be made when

the most final information is available. Although the Service is the agency authorized to make final determinations on these questions, regulations governing the ESA section 7 consultation process require that the Corps make an initial determination of the ISOP/IOP's effects to listed species based on your analysis of the best available information. This will be a critical part of the Corps' NEPA analysis of this project.

#### 2. L-29 Operations

The Department of the Interior would like the Corps to clarify the imposed constraints relative to L29. All simulations, including the RPA 100-102, assume that water levels are constrained to 9.0 feet in L29. We understand, however, that the Corps may be working with the Florida Department of Transportation to remove this constraint. If an agreement to remove this constraint is possible, then RPA runs should be made with no L29 limit on S333 discharges.

#### 3. Effects on natural areas

To be complete, the EIS should fully examine the impacts on natural areas other than Cape Sable seaside sparrow habitats. The draft EIS should, as completely as possible, address the expected hydrologic and ecological impacts in the WCAs, ENP (including Florida Bay and the west coast estuaries), and Biscayne Bay.

#### 4. Modeling concerns

As requested, we have brought up modeling questions and concerns to your staff as we recognized them rather than waiting to forward them in formal correspondence. However, we feel that is appropriate to record our concerns here as well, along with our understanding of steps the Corps will take to address them. Needs for additional modeling corrections include:

##### A. Completion of code necessary to accurately simulate the 332B detention area.

We understand that this was not completed for the IOP 9 or IOP 2 runs and that this work will soon be completed. It will be important to analyze the effect this more realistic modeling may have on the IOP's ability to meet RPA targets in the subpopulation F area.

B. Need to remove L31W berms from RPA runs and location of the L-31W levee

We understand that this was overlooked in the first part of the round 2 modeling for the RPA runs and that the corrections to remove the berms have now been made. The location of the L31W levee, modeled as being west of L31W canal, should be reviewed in the context of localized predictions for subpopulation C. As above, it will be important to look at how these changes influence the RPA results in comparison to ISOP and IOP results.

C. Need to improve resolution and reliability of results for subpopulation F and C habitat areas.

We continue to be uncomfortable with basing our analysis of alternative performance in these two areas solely on South Florida Water Management Model results because results in these areas may be unduly influenced by adjacent canals and structures in this model. In order to improve the reliability of modeling information available for these areas, NPS is willing to conduct a MODBRANCH run for these areas and provide that information to all participating agencies.



DP



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Office of the State Supervisor - Ecological Services

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May 30, 2000

Colonel Joe R. Miller  
District Commander, Jacksonville District  
U.S. Army Corps of Engineers  
P.O. Box 4970  
Jacksonville, FL 32232-0019

Dear Colonel Miller:

I am writing to clarify a statement made in the May 24, 2000, Department of the Interior Planning Aid Letter (PAL) for the Interim Operating Plan (IOP). It has been brought to our attention that our statement in point 2 of the summary that, "the Corps has not yet produced an ISOP or IOP alternative that appears to meet RPA requirements", could be misinterpreted as an indication that the Fish and Wildlife Service (Service) has determined that this year's Interim Structural and Operational Plan (ISOP) operations have not complied with Endangered Species Act requirements.

Our comments in the May 24, 2000, PAL are meant to apply to modeled versions of IOP and ISOP operations rather than actual operations. The modeled results show expected results of various operations given past rainfall patterns. Therefore, modeled results do not necessarily reflect conditions experienced in Cape Sable seaside sparrow habitats during this year's actual operations and actual rainfall patterns. However, these modeling results do provide useful information on the kinds of responses we would likely see in a similar rainfall year, so as we learn of potential problems through this modeling, the Corps should use that information to continuously update actual ISOP operations in order to provide maximal chances of meeting Endangered Species Act requirements.

I hope that this clarification will avoid any potential misunderstandings on this issue. For further

cc: Florida Fish and Wildlife Conservation Commission, Vero Beach, FL  
Florida Dept. of Environmental Protection, Tallahassee, FL  
Florida Dept. of Agriculture and Consumer Services, West Palm Beach, FL  
Executive Director, South Florida Water Management District, West Palm Beach, FL  
Miccosukee Tribe, Miami, FL  
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## United States Department of the Interior

National Park Service  
Everglades National Park

Fish and Wildlife Service  
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January 2, 2001

Colonel James G. May  
District Commander, Jacksonville District  
U.S. Army Corps of Engineers  
P.O. Box 4970  
Jacksonville, Florida 32232-0019

Dear Colonel May:

The Department of the Interior (Department) has prepared this Planning Aid Letter (PAL) for the Interim Operations of the Central and Southern Florida (C&SF) Project to Protect the Cape Sable Seaside Sparrow Until the Modified Water Deliveries to Everglades National Park (ENP) project is fully constructed, otherwise know as the Interim Operating Plan (IOP). Development of the IOP is closely related to development of Interim Structural and Operational Plan (ISOP) 2001 operations. Accordingly, this PAL is intended to apply to both projects. The South Florida Water Management District (SFWMD) is the local sponsor for these projects. Information presented below was developed in a series of meetings and other communications between the Fish and Wildlife Service (Service), the National Park Service, ENP, and the Corps of Engineers (Corps). This PAL is provided in accordance with the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*) and section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This PAL does not constitute the report of the Secretary of the Interior as required by section 2(b) of the FWCA, nor does it constitute a biological opinion under section 7 of the ESA. Due to anticipated changes in alternative design as the participating agencies evaluate elements of the IOP, the positions of the Department in this and any subsequent PALs are subject to change.

This PAL focuses on recommendations based on our analysis of structural and operational components modeled in a series of model runs called ISOP9db1-28. These runs were developed in an effort to devise an alternative that will provide the hydrologic equivalent of the exact provisions of the Reasonable and Prudent Alternative (RPA) presented in the Service's February 19, 1999, Biological Opinion (BO) for the endangered Cape Sable seaside sparrow (sparrow) in all sparrow habitats. We understand from members of your staff that ISOP9db28 will be the Corps' preferred alternative in upcoming National Environmental Policy Act (NEPA) documentation. Because information on the ISOP9db28 alternative was received very recently,

OPTIONAL FORM 90 (7-90)

### FAX TRANSMITTAL

# of pages ►

To	Lee Swain	From	Jon Moulting
Dept./Agency	Dial Cordy	Phone #	

our staffs have not completed a full analysis of this particular run. However, we have completed an analysis of the previous model run, ISOP9db24 and, based on descriptions provided by your staff, we assume for purposes of this PAL that ISOP9db28 results will be similar. A more detailed discussion of our analysis of modeled alternatives and the ecological basis for our recommendations will be provided in an FWCA Report, to be prepared subsequent to your publication of a draft Environmental Impact Statement for the IOP.

We are pleased to note that significant progress on this project has been accomplished since our May 24, 2000, PAL. ISOP9db28 appears to meet RPA targets for subpopulations A, B, C and D. Remaining issues center on efforts to provide the hydrologic equivalent of RPA targets in the subpopulation E and F areas without releasing additional water into Northeast Shark River Slough. Our comments are provided below by area.

Western Shark Slough - subpopulation A

As documented in our November 2, 2000, letter to you, the Service has concluded that the best currently available scientific and commercial information indicates that the Corps' ISOP 2001 proposal for S12, S343 and S344 operations (as modeled in ISOP9db28 and several other runs) will fulfill the February 19, 1999, RPA's requirement for the subpopulation A. This represents a significant improvement in the likelihood of successful nesting for the sparrow, and resolution of difficult and long-standing policy and technical questions.

We are hopeful that this set of operations will continue to be part of your preferred alternative for the ISOP and IOP. However, Mr. Richard Punnett of your staff has indicated that some Corps staff have expressed reservations regarding effects these operations may have on structural integrity of the C&SF Project works during high water periods. If modifications to the current proposal are indeed necessary, Service evaluation of any changes would require additional modeling runs to ensure that subpopulation A habitat areas would not be adversely affected. Any such changes would have to be re-evaluated for compliance with RPA requirements.

Subpopulations B, C and D

Operational modifications included in ISOP9db28 and several similar runs appear to have

alter expected performance in the subpopulation C and D habitat areas. Any such changes would have to be re-evaluated for compliance with RPA requirements.

### Subpopulations E and F

#### 1. Reliability of South Florida Water Management Model (SFWMM) Results.

As noted in our May 24, 2000, PAL, SFWMM results for ISOP alternatives in the subpopulation E and F areas appeared promising at first glance, but serious questions regarding the reliability of SFWMM results in this area remained. Since our previous PAL, SFWMD staff have revised the SFWMM model to better represent the S332B pump and retention area(s). This revised model produced much reduced estimates of hydroperiod and water level increases in the subpopulation E and F habitats resulting from S332B operations, suggesting that the ISOP 2000 operations actually fell far short of their intended targets. This and other evidence led to modeling of an additional retention area and revised operations for S332B in an attempt to ensure that ISOP 2001 and IOP operations would meet the RPA targets.

While this most recent SFWMM modeling (including ISOP9db28) suggests that an additional retention area may significantly improve ISOP performance in the subpopulation E and F habitats, hydrologic experts from ENP and SFWMD agree that the 2x2 mile scale of the SFWMM makes this model an insufficient tool with which to assess several aspects of the Corps' ISOP 2001/IOP proposal. These experts have stated to the Service that the SFWMM cannot reliably estimate water levels in the retention area(s), water levels in sparrow habitats directly adjacent to the retention area(s), or the magnitude and frequency of expected surface water spillover from the retention area(s) into sparrow habitat. As explained in our June 21, 2000, letter to Mr. Richard Bray of the Florida Department of Environmental Protection, these factors have the potential to significantly affect sparrow habitats and sparrow nesting success in much of the subpopulation F area, and may also influence expected conditions in the subpopulation E area. Therefore, reliable information on expected values for these parameters is essential to the Service's ability to fully evaluate, and potentially concur with, the Corps' ISOP/IOP proposals, including construction of an additional S332B retention area. Since we have been advised by both ENP and SFWMD experts that the SFWMM results cannot be used to reliably answer these questions, we must turn to other information sources.

#### 2. Other available information

It is our understanding that most hydrologists familiar with these questions agree that the MODBRANCH model, which provides results on a far more detailed scale than does the SFWMM, is the preferred method for this kind of analysis. We further understand from you and your staff that Corps' efforts to model ISOP operations with MODBRANCH have not been successful so far, so the Corps intends to proceed with NEPA analysis of ISOP and IOP implementation using only SFWMM results. However, ENP staff have had success applying MODBRANCH to this question, and have provided some preliminary results to other agencies.

These results, along with an analysis of actual data collected during operations of the S332B pump and retention area this year (provided to the Corps via a July 10, 2000 e-mail message

from Dr. Thomas Van Lent of ENP to Mr. Dennis Duke) suggest that S332B could be operated, using different operations than any proposed by the Corps so far, in a way that would push enough water into the subpopulation E habitat to meet RPA targets there. However, in providing the hydrologic head necessary to push water to subpopulation E, areas of subpopulation F habitat near the retention area(s) would experience much longer hydroperiods and deeper water depths than called for in the RPA. Available information suggests that these depths and hydroperiods would cause the vegetation in a significant portion of the subpopulation F habitat area to convert to a composition unsuitable for the sparrow, and may also prevent or interrupt sparrow breeding in these areas in wet years. MODBRANCH modeling of S332B operations proposed by the Corps suggests that similar flooding of subpopulation F habitat will occur under ISOP 2000, ISOP9db28 and similar proposals.

Therefore, the best scientific information available to the Service at this time indicates that ISOP9db28 will not provide the hydrologic equivalent of RPA requirements outlined in our BO for both subpopulations E and F. Further, available evidence suggests that operations of this kind may cause additional taking of sparrows and additional adverse modification of sparrow critical habitat in subpopulation F, above and beyond incidental taking anticipated in the February 19, 1999, incidental take statement. Currently available information continues to indicate that the best method for reaching RPA targets in the subpopulation E and F areas is a simultaneous increase in discharges to Northeast Shark Slough coupled with a much broader front to limit seepage from the park than is currently being provided by the IOP/ISOP features.

We are confident that detailed MODBRANCH modeling developed through a cooperative Corps/Service/ENP/SFWMD effort can enhance our current understanding of the efficacy of the S332B pump and retention area(s), and hopefully provide the reliable information necessary for us to complete section 7 consultation on construction of a new S332B retention area and concur with ISOP9db28 or a similar proposal in the future. Until such an effort can be completed, we are concerned that current ISOP 2000 South Dade Conveyance System (SDCS) operations are not meeting RPA targets in subpopulations E and F, thereby continuing jeopardy conditions in these areas into a sixth year. In order to alleviate this continuing impact to the sparrow and to limit the Corps' possible legal liability as much as is possible given current policy constraints, we recommend that the Corps immediately implement Test 7 Phase II operations in the SDCS, as modeled in RPA102 and continue these operations until agreement can be reached on another set of operations.

not allow direct comparison of RPA130 with ISOP9db28 or similar runs. Mr. Pinnett recently agreed to revise the web site information to provide these comparisons, but they are not available currently. These comparisons will need to be provided prior to initiation of our work on an FWCA Report for the IOP.

The second issue is capacity of the S333 structure. As noted in our May 24, 2000, PAL, the  
\_\_\_\_\_ of 1,250 to 1,450 cubic feet

similar proposals that include use of the S332B pump and retention area(s), for subpopulations E and F at this time.

4. The Service recommends that Corps, SFMWD and BNP experts work together to expeditiously model ISOP operations using the MODBRANCH model, in hopes that this more detailed and more reliable information can be used to develop an ISOP proposal

5. IOP alternatives should include structural reinforcement of the S333 structure in order to maximize capacity.

6. Until concurrence on an ISOP alternative can be achieved, we recommend that the Corps immediately implement Test 7 Phase II operations in the SDCS, as modeled in RPA102.

We continue to appreciate the hard work and long hours invested by many members of your staff in this effort and are hopeful that concurrence will be possible in the near future. For further information or assistance, please contact Dave Sikkema at (305) 242-7814 or Heather McSherry at (561) 562-3909, extension 247.

Sincerely yours,

Heather McSherry

5-2-01